Feed and additives

Martin Dedina

12\textsuperscript{th} November 2008, Milano
Types of additives

- Masking and neutralizing agents
- Adsorbers - zeolites
- pH regulators
- Oxidizing agents
- Flocculants
- Disinfectants and antimicrobials
- Biological agents – enzymes, bacteria
- Urease inhibitors – yucca extracts
Community register of feed additives
pursuant to Regulation (EC) No 1831/2003

- Hundreds of additives listed
- Discussion dealing with efficiency for ammonia abatement
- Discussion about costs for their application
- Avoidance of preference of some additives against to others in the competition on market
- VevoVitall (benzoic acid) p. 293 of the Register is the first agent mentioned in the Guidebook with emissions reduction 25-30%
Broilers fed with Biostrong 510
Commercial flocks, Integration, Brazil, 4,880,000 birds housed, August 2008

Location: Integration, Paraná State, Brazil
Design: 2 treatments, 24,500 birds per house, 211 houses evaluated in total (27 houses for trial), Cobb 500, as hatched, 16 birds/m², Dark-house expanded and pelletized, corn / soy based diets

Pos. Control: Standard feed, with AGPs, MBM, PBP 1); 45.07 days on av.
Trial: Standard feed, with AGPs, MBM, PBP, 150ppm of Biostrong 510 (Performizer Ca,P); 44.56 days on av.

Coccidiostatic: Same program for both treatments

Period: June until August 2008

1) PBP = poultry by product
Broilers fed with Biostrong 510
Commercial flocks, Integration, Brazil, 4,880,000 birds housed, August 2008

- Positive Control
- Biostrong 510 (CaP)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Positive Control</th>
<th>Biostrong 510 (CaP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.W.G. (g/d)</td>
<td>100,0</td>
<td>101,4</td>
</tr>
<tr>
<td>Viability (%)</td>
<td>100,0</td>
<td>101,8</td>
</tr>
<tr>
<td>A.F.C. (correct for 2,5kgLW)</td>
<td>100,0</td>
<td>97,4</td>
</tr>
</tbody>
</table>
Broilers fed with Biostrong 510
Commercial flocks, Integration, Brazil, 4.880.000 birds housed, August 2008

<table>
<thead>
<tr>
<th>Positive Control</th>
<th>Biostrong 510 (CaP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.I. Producion Index</td>
<td>100,0</td>
</tr>
<tr>
<td>Producion Cost (R$/kg of LW)</td>
<td>100,0</td>
</tr>
</tbody>
</table>
Broilers fed with Biostrong 510
Commercial flocks, Integration, Brazil, 4.880.000 birds housed, August 2008

Ammonia production

<table>
<thead>
<tr>
<th>Date (age)</th>
<th>Treatment</th>
<th>Ventilation</th>
<th>Ammonia measurement 10cm above floor (ppm) - average values</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/06/2008 (22 days)</td>
<td>Positive control</td>
<td>Free</td>
<td>39,17 (Free) 47,67 (Barrier)</td>
</tr>
<tr>
<td></td>
<td>Biostrong 510</td>
<td>Free</td>
<td>18,33 (Free) 21,17 (Barrier)</td>
</tr>
<tr>
<td>23/06/2008 (34 days)</td>
<td>Free</td>
<td>Air flow = 0,1 m/s</td>
<td>25,00 (Free) 31,33 (Barrier)</td>
</tr>
<tr>
<td></td>
<td>Biostrong 510</td>
<td>Air flow = 0,4m/s</td>
<td>14,33 (Free) 16,00 (Barrier)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rel. reduction (%) -53% -56% -43% -49%</td>
</tr>
</tbody>
</table>

Each ammonia value represents the average of six measurements;

The barrier is a "duralex" plate with the size of 30cm x 50cm, trying to simulate the crowded flock conditions in front of the measurement point.
Suggestions and questions

- Need for independent studies and researches?
- To established a list of potentially appropriate agents for NH3 abatement based on trade marks?
- What parameters the agent has to fulfill for inclusion to the guidebook?